Limington Quadrangle, Maine

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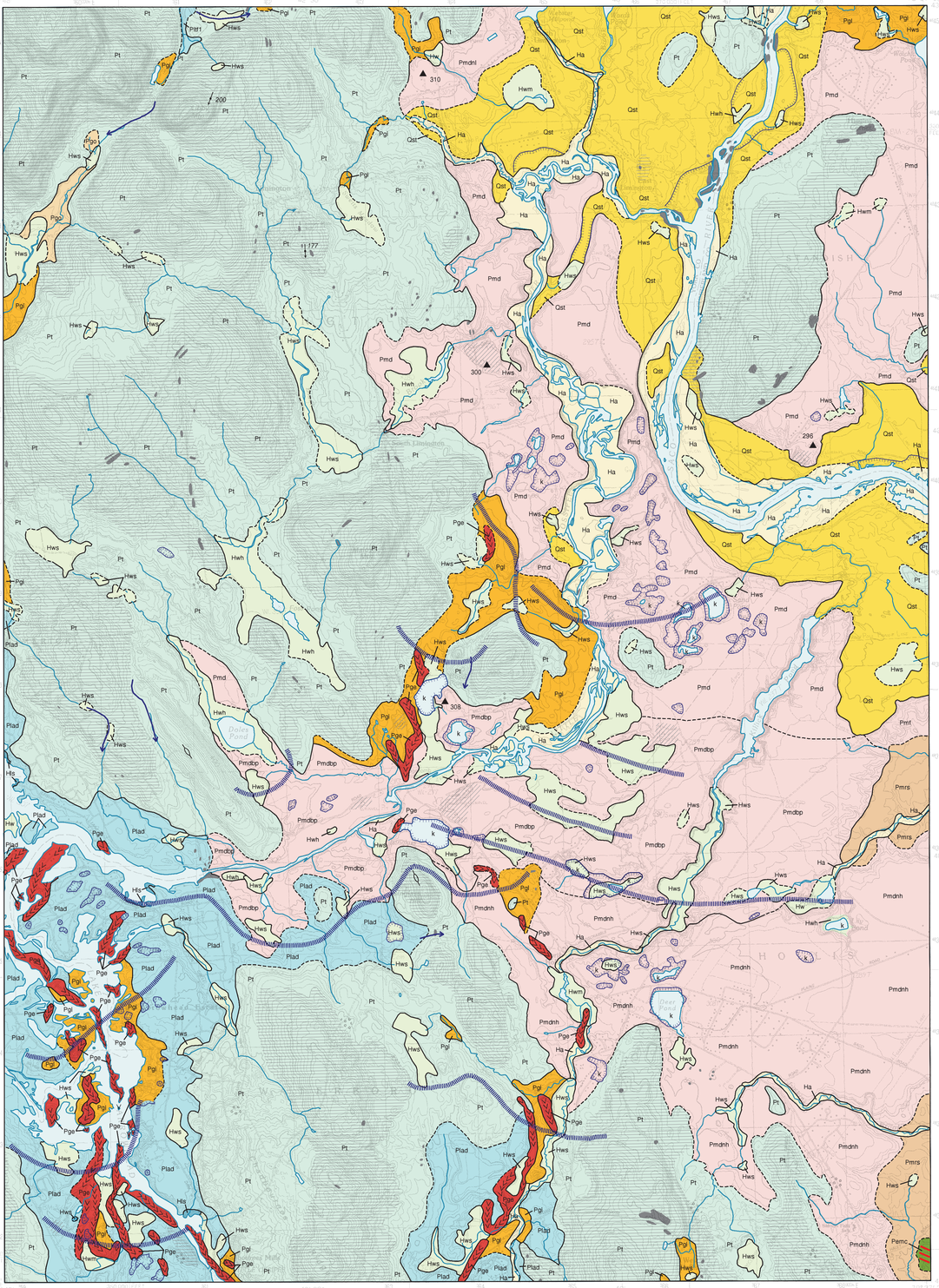
For additional information,
see Open-File Report 99-121.

Surficial Geology



SOURCES OF INFORMATION

Surficial geologic mapping by Andres Meglioli completed during the 1990 field season; funding for this work provided by the U. S. Geological Survey COGEOMAP program. Geologic contacts edited and revised by W. B. Thompson in 1997. Geologic unit designations and contacts revised and matched to adjacent quadrangles in 1999 by MGS geologists.

Quadrangle Location

SCALE 1 : 24,000

1 0 1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET

TRUE NORTH

Topographic base from U.S. Geological Survey Limington quadrangle, scale 1:24,000 using standard U.S. Geological Survey topographic map symbols.

The use of industry, firm, or local government names on this map is for location purposes only and does not impute responsibility for any present or potential effects on the natural resources.

HOLOCENE DEPOSITS

Hls **Lake shoreline -** Beach deposits on modern lake shores. Comprised mostly of sand and fine gravel.

Ha **Alluvium -** Generally well-sorted and stratified silt, sand, and gravel, deposited by modern rivers and streams.

Qst **Postglacial stream terrace -** Sand and gravel deposited on flat terraces by the Saco River and Little Ossipee River as these streams cut down to their present level.

Hws **Wetland, swamp -** Wetland, generally with cover of bushes and trees, but locally with open spaces.

Hwm **Wetland, marsh -** Wetland with grass and sedge vegetation.

Hwh **Wetland, heath -** Wetland with shrub vegetation. Peat deposits are likely to be present.

Hw **Wetland, unclassified -** Undifferentiated wetland, underlain by peat, muck, silt, or clay.

PLEISTOCENE DEPOSITS

Pltf$_t$ **Glacial Lake Town Farm deposits -** Sand and gravel deposited by glacial meltwater streams in the southernmost part of glacial Lake Town Farm (which extended north into the Steep Falls quadrangle).

Plad **Glacial Lake Arrowhead deposits -** Deltaic sand and gravel deposited in glacial Lake Arrowhead.

Pgo **Glacial outwash -** Sand and gravel deposited by glacial meltwater streams in an unnamed valley in the northwestern part of the quadrangle.

Pmrs **Marine regressive sand deposits** (sandy facies) - Sand, silt, and minor clay deposited in the sea adjacent to glaciomarine fan and delta deposits in the eastern part of the quadrangle.

Pmd **Glaciomarine deltas -** Sand and gravel deposited where glacial meltwater streams entered the sea during late-glacial submergence of the Saco Valley Lowland. Three delta complexes in the quadrangle have been named:

Pmdnh - North Hollis delta
Pmdbp - Boyd Pond delta
Pmdnl - North Limington delta

Pmf **Submarine fan -** Deposits of sand and gravel, possibly including till, that formed on the sea floor at the glacier margin.

Pge **Esker -** Discontinuous ridges, often sinuous, composed largely of stratified and interbedded sand and gravel. Formed in subglacial tunnels, probably during glacier retreat.

Pgl **Ice-contact deposits -** Sand and gravel deposited against remnant masses of glacial ice; massive to well stratified; commonly has collapse features and irregular topography.

Pemc **End moraine complex -** Moraine ridges composed of till (silty-sandy diamicton) deposited at the margin of the glacier. Only a few short moraines were found in the Limington quadrangle.

Pt **Till -** Massive, variably compact, silty-sandy diamicton deposited directly from glacial ice. Grain size ranges from clay to boulders. Widely distributed throughout the quadrangle, with thicknesses commonly between 10 and 30 feet (except in thin-drift areas).

Area where the original topography has been modified or obliterated by excavation. Includes some gravel pits.

Bedrock - Gray areas indicate barren ledge. Horizontal ruled pattern indicates areas where surficial sediments are generally less than 10 feet thick. Gray dots show location of small outcrops although some are exaggerated in size. Many bedrock exposures were too small to map precisely.

Contact - Indicates boundary between adjacent map units. Dashed where location is uncertain.

Glacially streamlined hill - Symbol indicates hills and bedrock knobs that have been elongated parallel to the flow of glacial ice.

Glacial striation - Dot marks points of observation; arrow shows ice movement direction inferred from striations on bedrock surface, with azimuth in degrees.

Terrace scarp - Scarp resulting from stream erosion.

Esker ridge - Shows trend of sand and gravel ridge deposited in a meltwater channel within or beneath glacial ice. Chevrons point in the direction of former meltwater flow.

Kettle - Depression created by melting of buried glacial ice and collapse of overlying sediments.

Meltwater channel - Channel eroded by a glacial meltwater stream or drainage from a glacial lake. Arrow shows known or inferred direction of flow.

Glaciomarine delta - Number indicates surveyed elevation (in feet) of the contact between topset and foreset beds, which marks the position of the corresponding sea level at the time of deposition.

End moraine ridge - Line indicates axis of till ridge deposited in the marginal zone of the receding ice sheet.

Ice-margin position - Line shows approximate position of part of the glacier margin during ice retreat, based on ice-contact topography.

Boulder field - Areas of numerous large boulders.

USES OF SURFICIAL GEOLOGY MAPS

A surficial geology map shows all the loose materials such as till (commonly called hardpan), sand and gravel, or clay, which overlie solid ledge (bedrock). Bedrock outcrops and areas of abundant bedrock outcrops are shown on the map, but varieties of the bedrock are not distinguished (refer to bedrock geology map). Most of the surficial materials are deposits formed by glacial and deglacial processes during the last stage of continental glaciation, which began about 25,000 years ago. The remainder of the surficial deposits are the products of postglacial geologic processes, such as river floodplains, or are attributed to human activity, such as fill or other land-modifying features.

The map shows the areal distribution of the different types of glacial features, deposits, and landforms as described in the map explanation. Features such as striations and moraines can be used to reconstruct the movement and position of the glacier and its margin, especially as the ice sheet melted. Other ancient features include shorelines and deposits of glacial lakes or the glacial sea, now long gone from the state. This glacial geologic history of the quadrangle is useful to the larger understanding of past earth climate, and how our region of the world underwent recent geologically significant climatic and environmental changes. We may then be able to use this knowledge in anticipation of future similar changes for long-term planning efforts, such as coastal development or waste disposal.

Surficial geology maps are often best used in conjunction with related maps such as surficial materials maps or significant sand and gravel aquifer maps for anyone wanting to know what lies beneath the land surface. For example, these maps may aid in the search for water supplies, or economically important deposits such as sand and gravel for aggregate or clay for bricks or pottery. Environmental issues such as the location of a suitable landfill site or the possible spread of contaminants are directly related to surficial geology. Construction projects such as locating new roads, excavating foundations, or siting new homes may be better planned with a good knowledge of the surficial geology of the site. Refer to the list of related publications below.

OTHER SOURCES OF INFORMATION

1. Meglioli, A., and Thompson, W. B., 1999, Surficial geology of the Limington 7.5-minute quadrangle, York and Cumberland Counties, Maine: Maine Geological Survey, Open-File Report 99-121, 12 p.
2. Meglioli, A., and Thompson, W. B., 1998, Surficial materials of the Limington quadrangle, Maine: Maine Geological Survey, Open-File Map 98-175.
3. Neil, C. D., 1998, Significant sand and gravel aquifers of the Limington quadrangle, Maine: Maine Geological Survey, Open-File Map 98-141.
4. Thompson, W. B., 1979, Surficial geology handbook for coastal Maine: Maine Geological Survey, 68 p. (out of print)
5. Thompson, W. B., and Borns, H. W., Jr., 1985, Surficial geologic map of Maine: Maine Geological Survey, scale 1:500,000.